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**THE INFLUENCE OF SAFETY MOTIVATION ON
THE RELATIONSHIP BETWEEN SAFETY
TRAINING AND SAFETY BEHAVIOR OF
BANGLADESHI WORKERS IN A MALAYSIAN
CONSTRUCTION COMPANY**



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**MASTER OF SCIENCE
UNIVERSITI UTARA MALAYSIA**

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CONSTRUCTION COMPANY**



By
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Thesis Submitted to
Othman Yeop Abdullah Graduate School of Business,
Universiti Utara Malaysia,
in Partial Fulfillment of the Requirement for the Master of Science
(Occupational Safety and Health Management)



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ABSTRACT

This study particularly targets to identify the level of safety behavior of Bangladeshi workers at the construction sectors of Malaysia which aims to close the gap identified from existing practices and literature reviews. 556 numbers of Bangladeshi workers were engaged from a construction site of Malaysia to understand the level of safety behavior demonstrated by them. Also the influence of safety motivation on the relationship between safety training and safety behavior of the Bangladeshi workers was attempted to investigate. Quantitative data analysis was performed including the descriptive statistics, reliability analysis and normality test. Hypothesis testing was performed by Pearson correlation, simple regression analysis and hierarchical regression. The hypotheses of this study was supported by the results of the data analysis. The level of safety behavior of Bangladeshi workers at the construction sites of Malaysia were found moderate. The relationship between safety training, safety motivation and safety behavior were found supported. The mediating effect of safety motivation on the relationship between safety training and safety behavior were partially supported. This study also discusses theoretical and practical implications with recommendations for future scope of research.

Keywords: safety training, safety motivation, safety behavior, Bangladeshi workers in construction industry

ABSTRAK

Kajian ini bertujuan untuk mengenal pasti tahap tingkah laku keselamatan pekerja Bangladeshi di sektor pembinaan Malaysia untuk menutup jurang yang dikenal pasti dari amalan sedia ada dan kajian literatur. 556 pekerja Bangladesh sebuah syarikat pembinaan Malaysia dijadikan populasi kajian untuk memahami tahap tingkah laku keselamatan yang ditunjukkan oleh mereka. Di samping itu, pengaruh motivasi keselamatan terhadap hubungan antara latihan keselamatan dan tingkah laku keselamatan pekerja Bangladesh cuba disiasat. Analisis data kuantitatif dilakukan termasuk statistik deskriptif, analisis kebolehpercayaan dan ujian normal. Pengujian hipotesis dilakukan menerusi korelasi Pearson, analisis regresi mudah dan regresi berhirarki. Hipotesis kajian ini disokong oleh hasil analisis data. Tahap keselamatan pekerja pekerja Bangladesh di tapak pembinaan Malaysia didapati sederhana. Hubungan antara latihan keselamatan, motivasi keselamatan dan tingkah laku keselamatan disokong. Kesan mediasi motivasi keselamatan terhadap hubungan antara latihan keselamatan dan tingkah laku keselamatan sebahagiannya disokong. Kajian ini juga membincangkan implikasi teoretikal dan praktikal dengan cadangan untuk penyelidikan masa depan.

Kata kunci: latihan keselamatan, motivasi keselamatan, tingkah laku keselamatan, pekerja Bangladeshi dalam industri pembinaan

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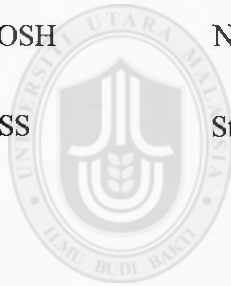
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LIST OF ABBREVIATIONS

ILO	International Labour Organization
DOSH	Department of Occupational Safety & Health
MoHR	Ministry of Human Resources
BLS	Bureau of Labor Statistics
OSHA	Occupational Safety and Health Act
CIDB	Construction industry Development Board
HSE	Health and Safety Executive
NIOSH	National Institute of Occupational Safety & Health
SPSS	Statistical Package for the Social Science



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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In terms of safety, construction industry is known as a high-risk industrial sector worldwide. The International Labour Organization (ILO) performed a research on the statistics of industrial accidents. This is telling that, 60000 people died each year in the construction sector (ILO, 2003). A lot more people (millions) are suffering from other serious injuries which also includes the ill-health (ILO, 2003). Besides, a lot of incidents are under reported and handled in a conservative way in terms of reporting. This means in actual situation the number is quite high (ILO, 2003).

In Malaysia, the scenario is very similar as mentioned above. The number of occupational accidents was investigated by Department of Occupational Safety and Health (DOSH), Malaysia. Table I.I below summarizes sector wise statistics of fatal incidents in Malaysia (DOSH, 2018). This table indicated that, construction industry experienced the maximum number of fatal accidents which was 169 in 2018.

REFERENCES

- Aguinis, H., & Kraiger, K. (2009). Benefits of training and development for individuals and teams, organizations, and society. *Annual Review of Psychology*, 60, 451-474.
- Analisis KKP (2018, n.d.). Department of Occupational Safety & Health, Malaysia (DOSH). Retrieved from <http://www.dosh.gov.my/index.php/download/analisis-kkp>.
- Arboleda, A., Morrow, P. C., Crum, M. R., & Shelley II, M. C. (2003). Management practices as antecedents of safety culture within the trucking industry: similarities and differences by hierarchical level. *Journal of Safety Research*, 34(2), 189-197.
- Baron, R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Barlett, J. Kotrlik and Higgins (2001) Organizational Research: Determining Appropriate Sample Size in Survey Research. *Information Technology, Learning, and Performance Journal*, 19(1), 43.
- Blanchard, P. N., & Thacker, J. W. (2004). Effective training: Systems, strategies, and practices. Upper Saddle River, NJ: Person Education.
- Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-cultural Psychology*, 1(3), 185-216.
- Burke, M. J., Sarpy, S. A., Smith-Crowe, K., Chan-Serafin, S., Salvador, R. O., & Islam, G. (2006). Relative effectiveness of worker safety and health training methods. *American Journal of Public Health*, 96(2), 315-324.
- Burns, N., & Grove, S. K. (2005). Using statistics to examine relationships. Burns N, Grove SK, eds *The Practice of Nursing Research: Conduct, Critique and Utilization 5th ed* St Louis, MO: Elsevier, 486-700.
- Chang, L. S. (2012). *A Study to Investigate the Influence of Work Safety Scale (WSS) on Compliance with Safety Behavior Among Foreign Workers in Construction Industry* (Doctoral dissertation, Universiti Utara Malaysia).
- Cheung, K., & Spickett, J. (2007). Laboratory safety training: Influence on knowledge and attituded of undergraduate studnets in Hong Kong. *Journal of Occupational Health Safety*, 23(2), 187-194.

- Cohen, A., & Colligan, M. (1998). Assessing Occupational Safety and Health Training (Publication No. 98-145). *National Institute for Occupational Safety and Health Publications Dissemination*. Retrieved October, 2, 2003.
- Cohen, A., Colligan, M. J., Sinclair, R., Newman, J., & Schuler, R. (1998). Assessing occupational safety and health training. *Cincinnati, Ohio: National Institute for Occupational Safety and Health*, 98-145.
- Colligan, M. J., & Cohen, A. (2004). The role of training in promoting workplace safety and health. *The Psychology of Workplace Safety*, 223-248.
- Cooper, D. R., & Schindler, P. S. (2008). International edition: business research methods. *New Delhi: MacGraw-Hill*.
- Cooper, D. R., & Schindler, P. S. (2014). Business Research Methods.© The McGraw– Hill Companies.
- Cooper, M. (1998). Current issues in health and safety training in the UK. *Journal of European Industrial Training*, 22(9), 354-361.
- Daim, N. (2015, October 28). 518 foreign workers deaths at construction site since 2006. *New Straits Times*. Retrieved from <https://www.nst.com.my/news/2015/10/518-foreign-workers-deaths-construction-site-2006>
- Dong, X., Entzel, P., Men, Y., Chowdhury, R., & Schneider, S. (2004). Effects of safety and health training on work-related injury among construction laborers. *Journal of Occupational and Environmental medicine*, 46(12), 1222-1228.
- Emory, C. W., & Cooper, D. R. (1991). Business Research Methods. Homewood IL: Richard D. Irwin.
- Faridah, I., Hashim, A.E., & Mahmood, M.A. (2010). Behaviour based safety approach: A mechanism for workplace safety improvement. *Proceedings of International Conference of Construction Project Management (ICCPM), Chengdu, China 16-18 Nov*.
- Gao, S., Mokhtarian, P. L., & Johnston, R. A. (2008). Nonnormality of data in structural equation models. *Transportation Research Record*, 2082(1), 116-124.
- Ghani, M. K., Abdul Hamid, Z., Mohd Zain, M. Z., Abdul Rahim, A. H., Mohamad Kamar, K. A., & Abdul Rahman, M. A. (2010). Safety in Malaysia construction: the challenges and initiatives. *Construction Research Institute Malaysia (CREAM), CIDB Malaysia*.

- Gillings, S. C., & Kleiner, B. H. (1993). New developments in health and safety programmes. *Work study*, 42(5), 9-12.
- Gravetter, F. J., & Wallnau, L. B. (2000). Statistics for the behavioral sciences.
- Grote, G., & Künzler, C. (2000). Diagnosis of safety culture in safety management audits. *Safety Science*, 34(1-3), 131-150.
- Hair, J. F., Money, A. H., Samouel, P., & Page, M. (2007). Research methods for business. *Education+ Training*.
- Harshbarger, D., & Rose, T. (1991). New possibilities in safety performance and the control of workers' compensation costs. *Journal of Occupational Rehabilitation*, 1(2), 133-143.
- Hofmann, D. A., Jacobs, R., & Landy, F. (1995). High reliability process industries: Individual, micro, and macro organizational influences on safety performance. *Journal of Safety Research*, 26(3), 131-149.
- Hughes, P., & Ferret, E. (2007). Introduction to Health and Safety at work 3rd edition.
- Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic Management Journal*, 20(2), 195-204.
- Johnson, K. A., & Ruppe, J. (2002). A job safety program for construction workers designed to reduce the potential for occupational injury using tool box training sessions and computer-assisted biofeedback stress management techniques. *International Journal of Occupational Safety and Ergonomics*, 8(3), 321-329.
- Johnston, J. J., Cattledge, G. T., & Collins, J. W. (1994). The efficacy of training for occupational injury control. *Occupational Medicine (Philadelphia, Pa.)*, 9(2), 147-158.
- Kaminski, M. (2001). Unintended consequences: organizational practices and their impact on workplace safety and productivity. *Journal of Occupational Health Psychology*, 6(2), 127.
- Khdaif, W. A. (2013). The moderating effect of personality traits on the relationship between management practices, leadership styles and safety performance in Iraq (*Doctoral dissertation, Universiti Utara Malaysia*).
- Kline, R. B. (2011). Principles and practice of structural equation modeling. 3rd edition. *New York: The Guilford Press*

- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607-610.
- Lauver, K. J. L. (2007). Human resource safety practices and employee injuries. *Journal of Managerial Issues*, 397-413.
- Law, W. K., Chan, A. H. S., & Pun, K. F. (2006). Prioritising the safety management elements: a hierarchical analysis for manufacturing enterprises. *Industrial Management & Data Systems*, 106(6), 778-792.
- Lembaga Pembangunan Industri Pembinaan Malaysia Act 1994 (2015, October). Construction Industry Development Board (CIDB). Retrieved from <http://www.cidb.gov.my/images/content/akta/Act-520-As-at-1-October-2015.pdf>
- Lin, J., & Mills, A. (2001). Measuring the occupational health and safety performance of construction companies in Australia. *Facilities*, 19(3/4), 131-139.
- Lingard, H. (2002). The effect of first aid training on Australian construction workers' occupational health and safety motivation and risk control behavior. *Journal of Safety Research*, 33(2), 209-230.
- Lippin, T. M., Eckman, A., Calkin, K. R., & McQuiston, T. H. (2000). Empowerment-based health and safety training: Evidence of workplace change from four industrial sectors. *American Journal of Industrial Medicine*, 38(6), 697-706.
- Lu, C. S., & Yang, C. S. (2010). Safety leadership and safety behavior in container terminal operations. *Safety Science*, 48(2), 123-134.
- MacKinnon, D. P. (2000). Contrasts in multiple mediator models. *Multivariate Applications in Substance Use Research: New Methods for New Questions*, 141-160.
- Maran, K. (2016). Safety management practices and safety behaviour among employees in steel fabrication construction company (*Doctoral dissertation, Universiti Utara Malaysia*).
- Marsh, T. W., Robertson, I. T., Duff, A. R., Phillips, R. A., Cooper, M. D., & Weyman, A. (1995). Improving safety behaviour using goal setting and feedback. *Leadership & Organization Development Journal*, 16(1), 5-12.
- Mashi, M.S. (2014). Moderating effect of consideration of future safety consequences on the relationship between safety management practices and safety performance among health care workers: A conceptual analysis. *International Journal of Academic Research in Business and Social Sciences*, 4(6), 402

- Materna, B. L., Harrington, D., Scholz, P., Payne, S. F., Stubbs, H. A., Hipkins, K., ... & Uratsu, C. (2002). Results of an intervention to improve lead safety among painting contractors and their employees. *American Journal of Industrial Medicine*, 41(2), 119-130.
- Miltenberger, R. (2012). *Behaviour Modification: Principles & procedures*. 5th ed. Belmont, CA: Wadsworth Cengage Learning
- Monthly Labour Review (2013, October). U.S. Bureau of Labor Statistics. Retrieved from <https://www.bls.gov/opub/mlr/2013/article/using-data-from-the-census-of-fatal-occupational-injuries-to-estimate-the-him>
- Moorthy Pakisamy (2012). *Examining The Impact Of Work Safety Scale (Wss) Among The Employees Of A Ship Building And Repair Company On Their Compliance With Safety Behaviour*. Master of Science, Universiti Utara Malaysia.
- Neal, A., & Griffin, M. (2006). A study of the lagged relationship among safety climate, safety motivation, safety behaviour, and accidents at the individual and group levels. *Journal of Applied Psychology*, 91, 946-953.
- Neuman, W. L. (1997). *Social research methods: qualitative and quantitative approaches*. Allyn & Bacon. Needham Heights, USA
- Ng, S. T., Cheng, K. P., & Skitmore, R. M. (2005). A framework for evaluating the safety performance of construction contractors. *Building and environment*, 40(10), 1347-1355.
- Nunnally, J., & Bernstein, I. (1994). *Psychometric Theory* 3rd edition (MacGraw-Hill, New York).
- Occupational Safety and Health Act (1994, n.d.). Department of Occupational Safety & Health, Malaysia (DOSH). Retrieved from <http://www.dosh.gov.my/index.php/legislation/acts/23-02-occupational-safety-and-health-act-1994-act-514/file>
- Oppenheim, A. N. (1992). Questionnaire design. *Interviewing and Attitude Measurement*, 24.
- Oskamp, S., & Schultz, P. W. (2005). *Attitudes and opinions*. Psychology Press.
- Pallant, J. (2001). *SPSS survival manual: A step by step guide to data analysis using SPSS for Windows (versions 10 and 11): SPSS student version 11.0 for Windows*. Open University Press.

- Pedersen, L. M., & Kines, P. (2011). Why do workers work safely? Development of safety motivation questionnaire scales. *Safety Science Monitor*, 15(1), 1-10.
- Pfeffer, J., & Veiga, J. F. (1999). Putting people first for organizational success. *Academy of Management Perspectives*, 13(2), 37-48.
- Probst, T. M., & Brubaker, T. L. (2001). The effects of job insecurity on employee safety outcomes: Cross-sectional and longitudinal explorations. *Journal of Occupational Health Psychology*, 6(2), 139.
- Richardson, S., Guru, K.B., Yu, M.C., Wei, K.K., & Pointon, L. (2005). *How to research: A guide for undergraduate & graduate students* (pp 40-41). Singapore: Thomson Asia Pte Ltd.
- Royse, D. (2007). *Research methods in social work*. Cengage Learning.
- Safety in Numbers. (2003, n.d.). International Labour Office Geneva. Retrieved from https://www.ilo.org/wcmsp5/groups/public/-ed_protect/-protrav/-safework/documents/publication/wcms_142840.pdf
- Sector and country wise statistics of foreign workers (2018, n.d.). Ministry of Human Resources, Malaysia (MoHR). Retrieved from http://myhos.mohr.gov.my/ebook/istatistik1_2018/mobile/index.html#p=54
- Sekaran, U. (2005). *Research methods for business skill building approach*. Joh Wiley & Son.
- Sekaran, U., & Bougie, R. (2010). Theoretical framework in theoretical framework and hypothesis development. *Research Methods for Business: A skill building approach*, 80.
- Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.
- Smith, P. M., & Mustard, C. A. (2007). How many employees receive safety training during their first year of a new job? *Injury prevention*, 13(1), 37-41.
- Subramaniam, C., Shamsudin, F. M., & Zin, M. L. (2016). Safety management practices and safety compliance: A model for SMEs in Malaysia. In *International Soft Science Conference* (pp. 2357-1330).
- Sulzer-Azaroff, B., & Austin, J. (2000). Does BBS work. *Professional Safety*, 45(7), 19.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* Boston. MA: Allyn and Bacon, 5, 2007.

- Thabane, L., Ma, J., Chu, R., Cheng, J., Ismaila, A., Rios, L. P., ... & Goldsmith, C. H. (2010). A tutorial on pilot studies: the what, why and how. *BMC Medical Research Methodology*, 10(1), 1.
- Tinmannsvik, R. K., & Hovden, J. (2003). Safety diagnosis criteria—development and testing. *Safety Science*, 41(7), 575-590.
- Training (2011, n.d.). National Institute of Occupational Safety and Health, Malaysia (NIOSH). Retrieved from <http://www.niosh.com.my/core-activities/training>
- Trochim, W., & Donnelly, J. (2006). The Research Methods Knowledge Base, 3rd. Mason, OH: Atomic Dog Publishing.
- Vassie, L. H., & Lucas, W. R. (2001). An assessment of health and safety management within working groups in the UK manufacturing sector. *Journal of Safety Research*, 32(4), 479-490.
- Vinodkumar, M. N., & Bhasi, M. (2010). Safety management practices and safety behaviour: Assessing the mediating role of safety knowledge and motivation. *Accident Analysis & Prevention*, 42(6), 2082-2093.
- Walker, B. L., & Harrington, S. S. (2004). Can nursing facility staff with minimal education be successfully trained with computer-based training? *Nurse Education Today*, 24(4), 301-309.
- Yu, S. C. K., & Hunt, B. (2004). A fresh approach to safety management systems in Hong Kong. *The TQM Magazine*.
- Zierold, K. M., & Anderson, H. A. (2006). Severe injury and the need for improved safety training among working teens. *American Journal of Health Behavior*, 30(5), 525-532.
- Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2010). Business Research Methods, South-Western, Cengage Learning. Mason, OH.
- Zin, S.M., & Ismail, F. (2002). Employers' behavioural safety compliance factors toward occupational, safety and health improvement in the construction industry. *Procedia-Social and Behavioural Sciences*, 36, 742-751.
- Zohar, D. (2002). The effects of leadership dimensions, safety climate, and assigned priorities on minor injuries in work groups. *Journal of organizational behavior*, 23(1), 75-92.

Appendix A: Questionnaire items in English

Safety Behavior Questionnaire

“Your participation in this research project is completely voluntary. The purpose of this questionnaire is to get your view on safety at your workplace. Your answers will be processed on a computer and will be handled confidentially to be used for academic purposes ONLY. No individual results will be presented in any way. Although we want you to answer each and every question, you have the right to refrain from answering any one particular question, a group of questions, or the entire questionnaire.”

I have read the above introduction to the questionnaire and agree to

1. First Part: Demographic Information

Sl No	Items	Answer
1	Name	
2	Identification No	
3	Nationality	
4	Name of the company	
5	Department	
6	Job Title	
7	Age & Gender	
8	No of years of experience	
9	Qualification / Education	
10	Background	
11	Accident history	
12	List of Safety Trainings received	

2. Second Part: Statement Questions

Rating on Likert Scale:

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

2.1 Safety Training (Questions 1 to 6)

Sl No	Using the above scale, please rate each questionnaire	1	2	3	4	5
1	My company gives comprehensive training to the employees in workplace health and safety issues.					
2	Newly recruits are trained adequately to learn safety rules and procedures.					
3	Safety issues are given high priority in training programmes.					
4	Management encourages the workers to attend safety training programmes.					
5	Safety training given to me is adequate to enable to me to assess hazards in workplace.					

2.2 Safety Motivation (Questions 6 to 10)

Sl No	Using the above scale, please rate each questionnaire	1	2	3	4	5
6	I feel that it is important to maintain safety at all times.					
7	I believe that safety at workplace is a very important issue.					
8	I feel that it is necessary to put efforts to reduce accidents and incidents at workplace.					
9	I feel that it is important to encourage others to use safe practices.					
10	I feel that it is important to promote safety programmes.					

2.3 Safety Behavior (Questions 11 to 26)

Sl No	Using the above scale, please rate each questionnaire	1	2	3	4	5
11	I overlook safety procedures in order to get my task done more quickly.					
12	I follow all safety procedures regardless of the situation I am in.					
13	I handle all situations as if there is a possibility of having an accident.					
14	I wear safety equipment required by practice.					
15	I keep my work area clean.					
16	I encourage co-workers' to be safe.					
17	I keep my work equipment in safe working condition.					
18	I take shortcuts to safe working behaviors in order to get the job done faster.					
19	I do not follow safety rules that I think are unnecessary.					
20	I report safety problems to my supervisor when I see safety problems.					
21	I correct safety problems to ensure accidents will not					

	occur.					
22	I help my co-workers when they are working under risky or hazardous conditions.					
23	I always point out to the management if any safety related matters are noticed in my company.					
24	I put extra effort to improve the safety of the workplace.					
25	I voluntarily carry out tasks or activities that help to improve workplace safety.					
26	I encourage my co-workers to work safely.					

Thank you for your time and support in this important endeavor.



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Appendix B: Questionnaire items in Bengali (Translated)

Safety Behavior Questionnaire (সুরক্ষা আচরন বিষয়ক প্রশ্নসমূহ)

1. First Part: Demographic Information (১। ১ম পর্বঃ জনসংখ্যা বিষয়ক তথ্যসমূহ)

“এই গবেষণা প্রকল্পে আপনার অংশগ্রহন সম্পূর্ণ ঐচ্ছিক। প্রশ্ন গুলোর উদ্দেশ্য হচ্ছে কাজের জায়গায় সুরক্ষা সম্পর্কে আপনার মতামত। আপনার উত্তরগুলি কম্পিউটারে সংরক্ষণ করা হবে এবং অতি গোপনীয়তার সাথে শুধুমাত্র গবেষনার কাজে ব্যবহার করা হবে। কোনভাবেই পৃথকভাবে ফলাফল প্রকাশ করা হবে না। যদিও আমরা চাই আপনি সবগুলো প্রশ্নের উত্তর দিন, কিন্তু আপনার অধিকার আছে যেকোনো একটি, একাধিক বা সবগুলো প্রশ্নের উত্তর না দেওয়ার।”

আমি প্রস্তাবলী সম্পর্কিত উপরে বর্ণিত ভূমিকাটি পড়েছি এবং বর্ণিত শর্ত অনুযায়ী এটি সম্পন্ন করতে রাজী আছি।

Sl No	Items (বিষয়সমূহ)	Answer(উত্তর)
1	Name (নাম)	
2	Identification No (পাসপোর্ট নং)	
3	Nationality(জাতীয়তা)	
4	Name of the company (কোম্পানি)	
5	Department (ডিপার্টমেন্ট)	
6	Job Title(পদবী)	
7	Age & Gender (বয়স ও লিঙ্গ)	
8	Years of experience(অভিজ্ঞতা)	
9	Qualification / Education (যোগ্যতা)	
10	Background(কাজেরপটভূমি)	
11	Accident history(দুর্ঘটনার ইতিহাস)	
12	List of Safety Trainings received (প্রশিক্ষণের তালিকা)	

2. Second Part: Statement Questions (২। দ্বিতীয় পর্বঃ বর্ণনামূলক প্রশ্ন)

Rating on Likert Scale: (লিকার্ট স্কেলে মানদণ্ড)

1 (১) Strongly Disagree (কোনভাবেই একমত না)	2 (২) Disagree (একমত না)	3 (৩) Neither Agree nor Disagree (একমত না আবার দ্বিমত নয়)	4 (৪) Agree (একমত)	5 (৫) Strongly Agree (পুরোপুরি একমত)
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2.1 Safety Training (Questions 1 to 5) (২.১ সুরক্ষা বিষয়ক প্রশিক্ষণ — ১ থেকে ৫)

নং	উপরের মানদণ্ড ব্যবহার করে প্রত্যেক টি প্রশ্নের উত্তর দিন	১	২	৩	৪	৫
১	আমার কোম্পানি কর্মীদেরকে কর্মক্ষেত্রে স্বাস্থ্য ও সুরক্ষা বা সেফটি বিষয়ক প্রশিক্ষণ বিশদভাবে প্রদান করে থাকে।					
২	নতুন কর্মীদের সুরক্ষা বা সেফটি বিষয়ক নিয়ম-কানুন ও পদ্ধতি সম্পর্কে পর্যাপ্ত প্রশিক্ষণ প্রদান করা হয়।					
৩	প্রশিক্ষণ কর্মসূচী গুলিতে সুরক্ষা বা সেফটির বিষয়গুলি সর্বাধিক গুরুত্ব দেয়া হয়।					
৪	ব্যবস্থাপকগণ বা বস কর্মীদের সুরক্ষা বা সেফটি বিষয়ক কর্মসূচীতে যোগ দিতে উৎসাহ দিয়ে থাকেন।					
৫	কাজের জায়গায় বিপদ নিরূপণে প্রদত্ত সেফটি প্রশিক্ষণ আমার জন্যে পর্যাপ্ত বলে আমি মনে করি।					

2.2 Safety Motivation (Questions 6 to 10) করে (২.২ সুরক্ষা বিষয়ক প্রেরণা—৬ থেকে ১০)

নং	উপরের মানদণ্ড ব্যবহার করে প্রত্যেক টি প্রশ্নের উত্তর দিন	১	২	৩	৪	৫
৬	আমি অনুভব করি যে সুরক্ষা বা সেফটি সবসময় বজায় রাখা উচিত।					
৭	আমি বিশ্বাস করি যে কাজের জায়গায় সুরক্ষা বা সেফটি খুবই গুরুত্বপূর্ণ বিষয়।					
৮	আমি অনুভব করি যে কাজের জায়গায় দুর্ঘটনা কমানোর জন্যে চেষ্টা করা বা অ্যাকশন নেওয়া খুব দরকারি।					
৯	আমি অনুভব করি যে নিরাপদ কাজের চর্চা বা অভ্যাস করতে অন্যদেরকে উৎসাহিত করা দরকার।					
১০	আমি অনুভব করি যে সুরক্ষা বা সেফটি কার্যক্রম উন্নত ও প্রচার করা দরকার।					

2.3 Safety Behavior (Questions 11 to 26) (২.৩ সুরক্ষা বিষয়ক অভ্যাস—১১ থেকে ২৬)

নং	উপরের মানদণ্ড ব্যবহার করে প্রত্যেক টি প্রশ্নের উত্তর দিন	১	২	৩	৪	৫
১১	আমি আমার কাজ আরও দ্রুত সম্পন্ন করার জন্যে সুরক্ষা বা সেফটি পদ্ধতি উপেক্ষা করি।					
১২	আমি যে অবস্থায়ই থাকি না কেন সুরক্ষা বা সেফটি পদ্ধতি মেনে চলি।					
১৩	যেকোনো সময় দুর্ঘটনা ঘটার সম্ভাবনা আছে — এটা মাথায় রেখেই আমি সমস্ত পরিস্থিতি মোকাবিলা করি।					
১৪	আমি প্রয়োজন অনুযায়ী সুরক্ষা বা সেফটি যন্ত্রপাতি পরিধান করি।					
১৫	আমি আমার কাজের জায়গা পরিষ্কার-পরিচ্ছন্ন রাখি।					
১৬	আমি আমার সহকর্মীদের নিরাপদে কাজ করার ব্যাপারে উৎসাহিত করি।					
১৭	আমি আমার কাজের যন্ত্রপাতি নিরাপদ অবস্থায় রাখি।					
১৮	আমি কাজ দ্রুত শেষ করার জন্যে সুরক্ষা বা সেফটি বিষয়ক অভ্যাসের ব্যাপারে তাড়াহুড়া বা শটকাটের আশ্রয় গ্রহন করি।					
১৯	আমি যে সমস্ত সুরক্ষা বা সেফটি নিয়ম-কানুন অপ্রয়োজনীয় মনে করি সেগুলো কাজের ক্ষেত্রে মানি না।					

২০	আমি সুরক্ষা বা সেফটি সংক্রান্ত সমস্যা দেখতে পেলে আমার সুপারভাইসরকে রিপোর্ট করি।						
২১	আমি দুর্ঘটনা প্রতিরোধের জন্যে সুরক্ষা বা সেফটি সংক্রান্ত সমস্যা সংশোধন করি।						
২২	আমার সহকর্মীরা যখন ঝুঁকিপূর্ণ বা বিপদজনক অবস্থায় কাজ করে, আমি তাদেরকে সহযোগিতা করি।						
২৩	আমি সুরক্ষা বা সেফটি সংক্রান্ত বিষয় পর্যবেক্ষণ করলে তা সবসময় ব্যাবস্থাপনা কর্তৃপক্ষ বা বসদেরকে জানাই।						
২৪	আমি কাজের পরিবেশ উন্নত করার জন্যে সবসময় অতিরিক্ত প্রচেষ্টা দিয়ে থাকি।						
২৫	কর্মক্ষেত্রে সুরক্ষা বা সেফটি উন্নত করার জন্যে, আমি নিজের ইচ্ছায় স্বেচ্ছাসেবক হিসেবে অতিরিক্ত কাজ করে থাকি।						
২৬	আমি আমার সহকর্মীদের নিরাপদে কাজ করার ব্যাপারে উৎসাহিত করি।						

এই গুরুত্বপূর্ণ গবেষণামূলক কার্যক্রমে আপনার সময় ও সমর্থন দিয়ে সহযোগিতা করার জন্যে আপনাকে অসংখ্য ধন্যবাদ।

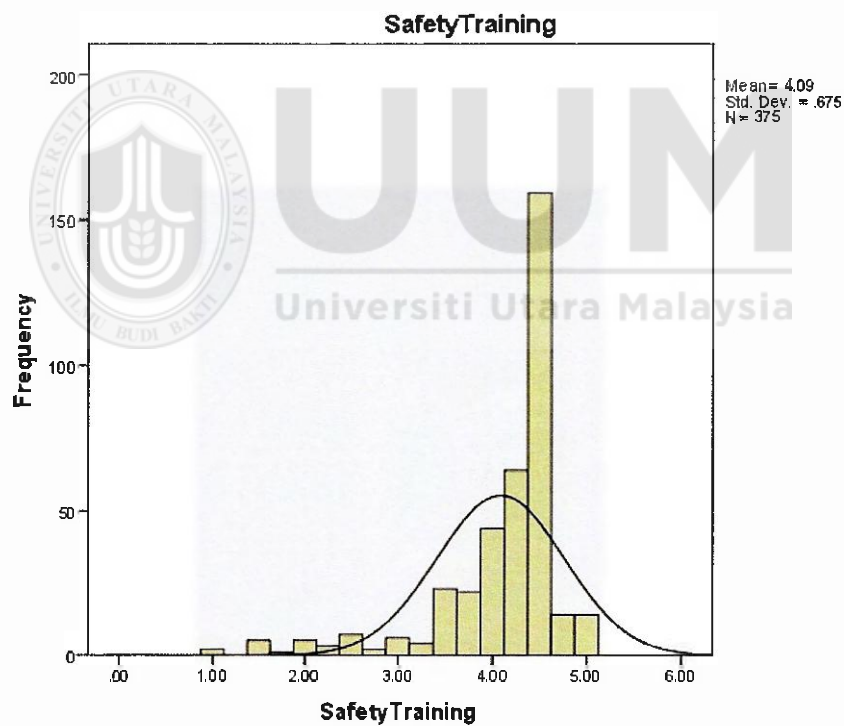


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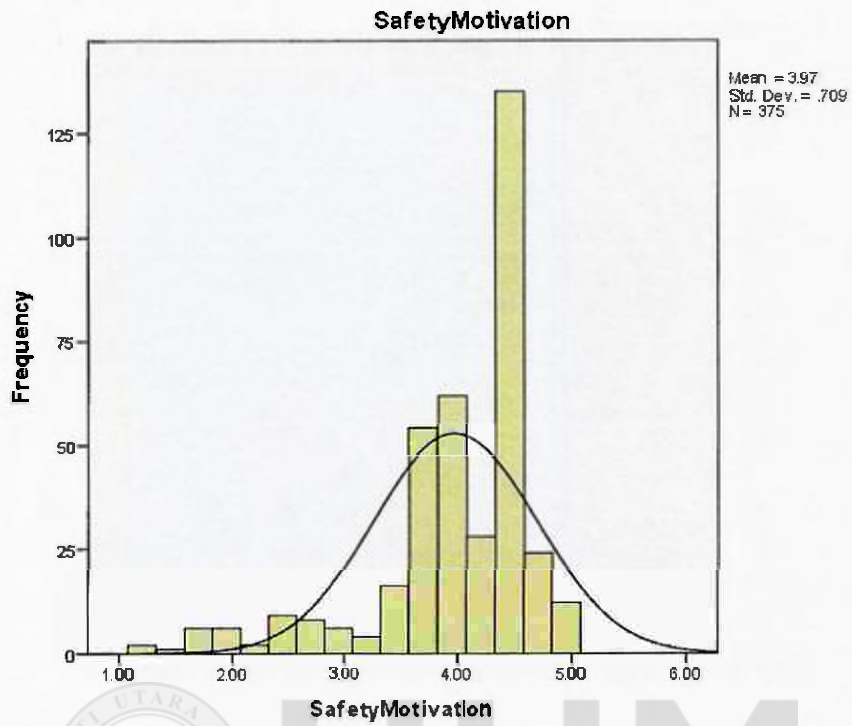
Appendix C: Normality testing results of variables and associated histograms

		Statistics			
		Safety Training	Safety Motivation	Safety Compliance	Safety Participation
N	Valid	375	375	375	375
	Missing	0	0	0	0
Skewness		-2.224	-1.610	-1.352	-.504
Std. Error of Skewness		.126	.126	.126	.126
Kurtosis		5.747	2.723	2.933	-.736
Std. Error of Kurtosis		.251	.251	.251	.251

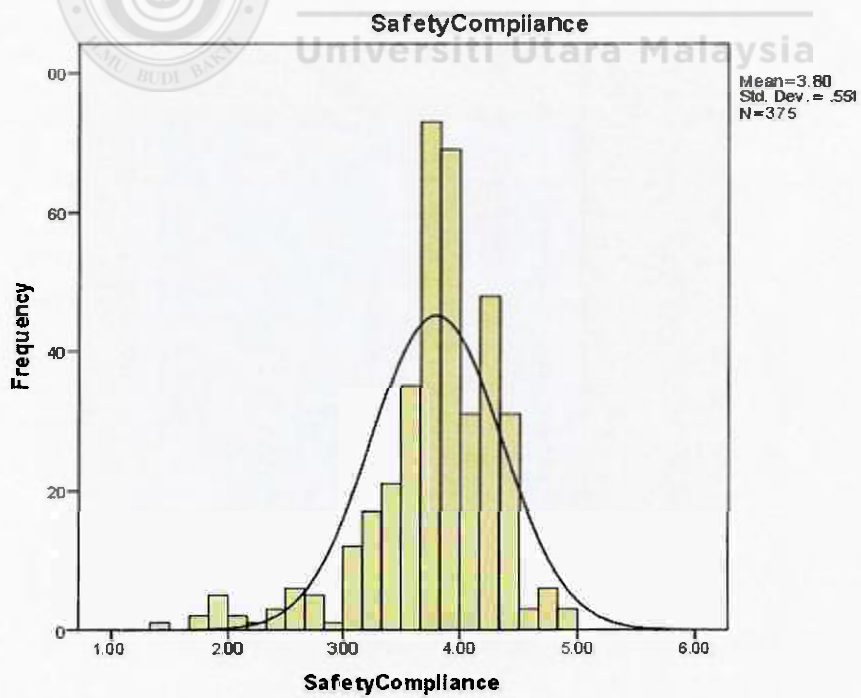
1- Safety Training



2 – Safety Motivation



3- Safety Compliance



4 – Safety Participation

